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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/610,951	07/01/2003	Tianping Huang	304-30097-US	4106

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EXAMINER

FULLER, BRYAN A

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/610,951

Applicant(s)

HUANG ET AL.

Examiner

Bryan A. Fuller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 17 is/are pending in the application.
- 4a) Of the above claim(s) 11 - 17 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 and 10 is/are allowed.
- 6) ☒ Claim(s) 1-4, and 6 - 8 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☒ Claim(s) 1 - 17 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 07/01/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1 - 10, drawn to a method for inhibiting the flow of water in a subterranean formation, classified in class 166, subclass 292.
 - II. Claims 11 - 17, drawn to a composition for inhibiting the flow of water in a subterranean formation by formation of a silica gel, classified in class 507, subclass 269.
 2. The inventions are distinct, each from the other because:
 3. Inventions II and I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product can be used in the stabilization of ground soil or as a cementing agent in building or highway construction. The product can also be used for thickening and coating formulations.
 4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
 5. During a telephone conversation with David Mossman on 3/11/2005 a provisional election was made with traverse to prosecute the invention of Group I claims 1 - 10.
- Affirmation of this election must be made by applicant in replying to this Office action.

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Claims 11 – 17 are withdrawn from further consideration by the examiner, 37

CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 – 4, 6, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Chatterji et al (6,059,036).

With respect to claim 1: Chatterji et al teaches in column 1, lines 51 – 58 a method for sealing subterranean zones with a sealing composition comprising of an aqueous alkali metal silicate solution, a gelling agent, and a delayed activator. Claim 1 uses the terms hardener and catalyst. Inherently, the gelling agent in Chatterji et al is used to facilitate the reaction and performs the similar function as a catalyst. Additionally, the delayed activator performs the same function as a hardener, which could be used to facilitate the reaction.

With respect to claims 2 - 4: Chatterji et al teaches in column 2, lines 15 –16 that the delayed acid activator is comprised of an ester. Additionally, Chatterji et al teaches the use of esters of certain acids, i.e. tartaric acid. *Hawleys*, Condensed Chemical Dictionary, Twelfth Edition teaches tartaric acid (dihydroxysuccinic acid) as a dicarboxylic acid that can yield dimethyl succinate as a dialkyl ester. *Hawleys* also

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teaches that tartaric acid is a dicarboxylic acid with 1 to 8 carbon atoms and it produces a dialkyl ester with 1 to 4 carbon atoms.

With respect to claim 6: Chatterji et al teaches in column 3, lines 18 – 22 that of the various alkali metal silicates which can be utilized for this invention, sodium silicate is preferred.

With respect to claim 7: Chatterji et al teaches in column 1, lines 65 – 67 the prepared, gelled, but unset sealing composition is placed in a subterranean zone or zones to be sealed thereby.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chatterji et al (6,059,036).

Channerji et al teaches in column 3, lines 47 – 49 an amount of gelling agent (catalyst) in the range of from about 0.5% to about 3% by weight of the alkali metal silicate solution. It appears that the composition ranges are met for the activator (hardener) and the alkali metal silicate. Alternatively, it would have been obvious to one of ordinary skill in the art to which the invention pertains, through routine laboratory

experimentation, to employ the suggested composition ranges to form silica gel used for inhibiting the flow of water in a subterranean formation.

Claim Objections

10. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Allowable Subject Matter

11. Claims 9 and 10 are allowed.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Vinot et al (4,799,549) and Terry et al (5,168,928) each disclose state of the art in silica gels used for inhibiting the flow of water in subterranean formations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan A. Fuller whose telephone number is (703) 605-0215. The examiner can normally be reached on M - Th 7:30 - 5:00 and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on (703) 308-2151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David J. Bagnell
Supervisory Patent Examiner
Art Unit 3672

baf